

Work Order ID 84873

May-29-12 1:00:35 PM

ASAP

84873

Page 1

Item ID: D2500-3-100

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Ext'n - 'I' Beam Web 4"

Start Date: 29/05/2012 Start Qty: 100.00

100

Cust Item ID:

Required Date: 16/07/2012 Req'd Qty: 100.00

100

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/05/30

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D2500

Rev H

100

0.00

100

PURCHASING

Purchasing

Purchasing

Memo

Issue P/O:

17079

a) Extrude as per Dwg D2500

b) Material: 6061-T6 (QQ-A-200/8)

c) Minimum yield tensile strength = 35 ksi

d) Minimum ultimate tensile strength = 38 ksi

e) Minimum elongation = 8%

f) Order at 100" long

g) Caradon Indalex Tool # MS-18867

h) To be packed per DSK 066

i) Pull test to ASTM standard B221 required.

j) Material certification is required

CL 12/05/30 (100)

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Packaging

Memo

Ensure material certification is attached

0.00

12/6/20 (110)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 84873

84873

Page 2

May-29-12 1:00:35 PM

Item ID: D2500-3-100

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Ext'n -I' Beam Web 4"

Start Date: 29/05/2012 Start Qty: 100.00

100

Cust Item ID:

Required Date: 16/07/2012 Req'd Qty: 100.00

100

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing Memo Check Pull test per Dwg D2500 for compliance page attached. Check hardness with Webster tester	0.00 0.00				100			12/06/21
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: <u>BH</u> Memo	0.00 0.00				100			BH 12/06/21
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							12/6/22 JF MF 12-06-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

May-29-12 1:00:39 PM

Page 1

Work Order ID: 84873

84873

Parent Item: D2500-3-100

D2500-3-100

Parent Item Name: Ext'n - 'I' Beam Web 4"

Start Date: 29/05/2012

Required Date: 16/07/2012

Start Qty: 100.00

Required Qty: 100.00

Comments: IPP: E02.09.10Added DSK 066 KJ
IPP F 07.07.06 rev G dwg EC IPP Rev:G as per
dwg revH DD 10.02.23 verified byEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-3-100P		Purchased	No			110	Each	0.0000	1	100			

D2500-3-100P

Ext'n - 'I' Beam Web 4"

**

12/6/2012

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SPECIFICATION CONTROL DRAWING

D2500-1-XXX EXTRUSION & D2500-3-XXX EXTRUSION

NOTES:

1) MATERIAL: 6061-T6 ALUMINUM PER QQ-A-200/8 OR AMS-QQ-A-200/8 OR ASTM B221

MINIMUM TENSILE YIELD STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
MINIMUM ELONGATION = 8%

A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES

- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART B/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: D2500-1 = 0.143 lb/in, D2500-3 = 0.066 lb/in

8) FOR D2500-1 PART NUMBER IS D2500-1-XXX WHERE XXX IS CUT LENGTH (EX. D2500-1-190 IS 190" LONG). D2500-1 EXTRUSION MANUFACTURED FROM:

- A) BON L DIE # 897105 -> PREFERRED
- B) CARADON MIDEAST DIE # PAH-28030
- C) CARADON MTL DIE # MH-18868

9) FOR D2500-3, PART NUMBER IS D2500-3-XXX WHERE XXX IS CUT LENGTH IN INCHES (EX. D2500-3-100 IS 100" LONG). D2500-3 EXTRUSION MANUFACTURED FROM:

- A) CARADON INDALEX DIE # MS-18867

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 84873 MLJ
12/05/30

RELEASED
2010-02-02
MP

REV.	DESCRIPTION	BY	DATE
H	REDRAW & REFORMAT DWG. CORRECT BON L DIE # TYPO (ZN B8-1), ADD AMS & ASTM MATL. OPTION (ZN D8-1), TOLERANCES NOW PER CARADON DWG (SHT 2)	CP	09.07.16
G	ADD DIE NUMBERS & 'DIMS IN INCHES' NOTES	PH	07.04.17
F	CHANGE MAT. TO 6061-T6	DS	97.09.29
E	CHANGE MATERIAL TEMPER	DS	96.10.24
D	ADD MATERIAL PROPERTIES	DS	96.10.07
C	ADD D2500-3 WEB	BW	96.04.26
B	CHANGE INTERNAL WEB	DS	96.03.24
A	NEW ISSUE	DS	96.03.19
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.07.16		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2500 REV. H
SHEET 1 OF 2
TITLE EXTRUSION SCALE NTS

COPYRIGHT © 1996 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

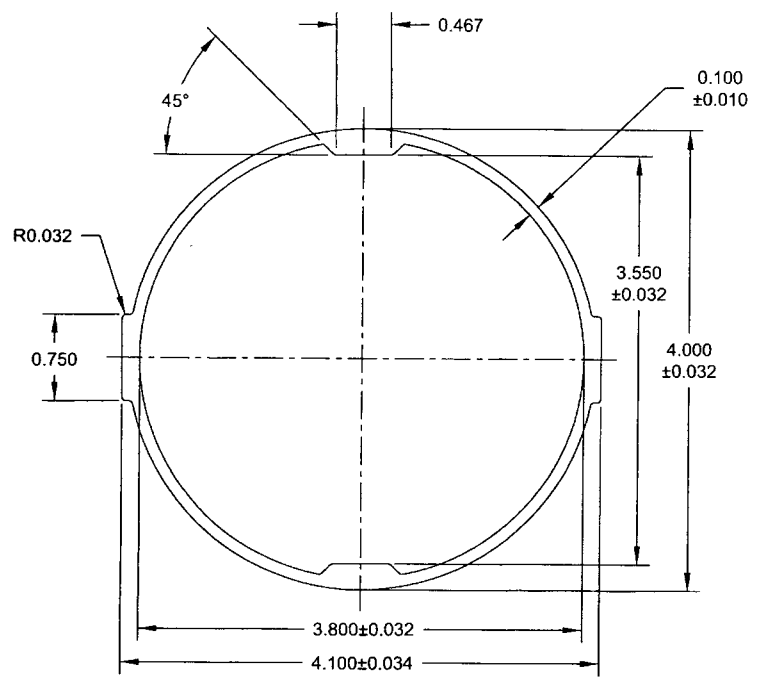
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

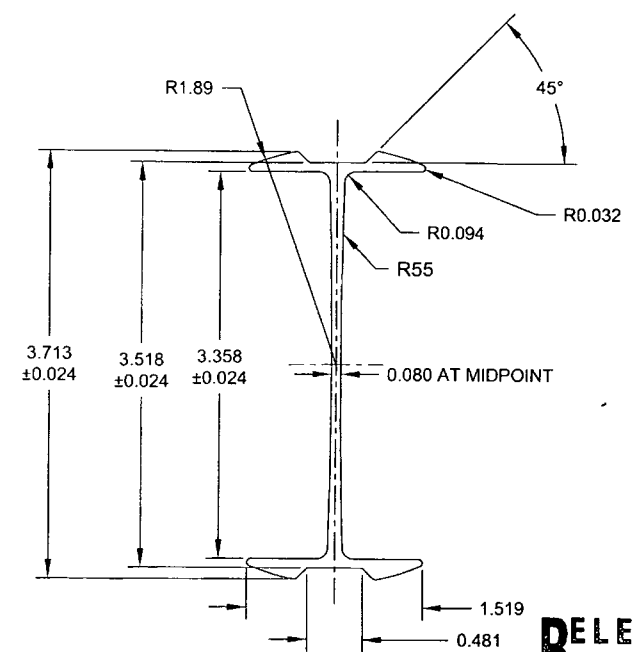
NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

24873



D2500-1



D2500-3

RELEASED
2010-02-02
MP

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D2500	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		EXTRUSION	NTS
DATE	09.07.16	<small>COPYRIGHT © 1998 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO17079**

Purchase Order Date 5/30/12

PO Print Date 5/31/12

Page Number 1 of 1

Order From :

VC-SAP001

SAPA CANADA INC
LOCKBOX B9427
PO BOX 9100
POSTAL STATION F
TORONTO, ONTARIO M4Y 3A5
CANADA

Contact Name

Vendor Phone 800 563 5120

Vendor Fax 800 563 8310

Vendor Account Nbr 201355

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr 10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REVISED \$

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D2500-3-100P	Ext'n -T Beam Web 4"	6/15/12 Yes	100.00 Each	Yours ppd	\$15.6975	\$1,569.75

Special Inst: AS PER DWG D2500 REV. H
B84373
MATERIAL: 6061-T6 (QQ-A-200/8)
MINIMUM YIELD TENSILE STRENGTH
= 35 KSI
MINIMUM ULTIMATE TENSILE
STRENGTH = 38 KSI
MINIMUM ELONGATION = 8%
100" LONG
CARADON INDALEX (SAPA) TOOL #
MS-18867
TO BE PACKED PER DSK 066
PULL TEST TO ASTM STANDARD B221
REQUIRED



PO Total:

\$1,569.75

Change Nbr: 2

Change Date: 5/31/12

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required - **YES** NO

LES MARCHANDISES CI-DESSUS ONT ÉTÉ REÇUES EN BONNE ET DUE FORME
THE ABOVE GOODS WERE RECEIVED IN GOOD ORDER

325 rue Avro
Pointe-Claire, QC, Canada H9R 5W3
Téléphone (514) 697-5120
Fac-simile (514) 694-8310

sapa:

Rapport des propriétés mécaniques Mechanical Properties Test Report

Client / Customer : **DART AEROSPACE LTD**
Adresse / Address : **1270 ABERDEEN STREET
HAWKESBURY ONT,
K6A 1K7**

commande Sapa / Sapa order # : **2052371**

bon de commande / Purchase order # : **P017079**

de matrice / Die # : **MS 18867**

Description : **D2500-3**

Alliage & trempage / Alloy & temper : **6061 T6**

Customer Part #: **D2500-3-100P**

Contrôle / Control # : **70008-1**

Coulée / Cast # : **53999**

	Min.requis Min.required	Résultat actuel Actual results
Tension ultime Ultimate stress (psi)	38 000	40 598
Contrainte élastique Yield stress (psi)	35 000	38 045
% élongation dans 2" % elongation in 2"	8	12
Dureté Rockwell E (hre) Rockwell E Hardness (hre)	88 @ 100	92

Composition chimique typique / Typical chemical composition :

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6063	0,20 - 0,60	0,35 Max	0,10 Max	0,10 Max	0,45 - 0,90	0,10 Max	0,10 Max	0,10 Max
6005	0,60 - 0,90	0,35 Max	0,10 Max	0,10 Max	0,40 - 0,60	0,10 Max	0,10 Max	0,10 Max
6005A	0,68 - 0,72	0,15 - 0,27	0,08 - 0,12	0,20 - 0,24	0,48 - 0,52	0,03 Max	0,05 Max	0,03 Max
6061	0,40 - 0,80	0,70 Max	0,15 - 0,40	0,15 Max	0,80 - 1,20	0,04 - 0,35	0,25 Max	0,15 Max
6351	0,7 - 1,3	0,5 Max	0,10 Max	0,40 - 0,80	0,40 - 0,80	---	0,20 Max	0,20 Max

Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par la norme ASTM B-221-08 excepté pour la section 8.2 (nombre de spécimen) .

We hereby certify that the material supplied meets the chemical properties as published by the ASTM B-221-08 except for section 8.2 (number of specimen) .

Sincèrement vôtre,
Yours truly,

date : **2012-06-18**



Gilles Pelletier
Technicien de la qualité
Quality technician